

ABDUZHAMILOV, Sh.; BELEN'KIY, V.M.; CHERNOVA, L.P.; CHERNOV, G.M.

Angular distribution of shower particles in collisions of 24
Bev. protons with nucleons and nuclei of a photoemulsion.
Izv. AN Uz. SSR. Ser. fiz.-mat. nauk 9 no.1:98-104 '65.

1. Institut yadernoy fiziki AN UzSSR.

(MIRA 18:6)

L 45344-66 MWT(m)/T

ACC NR: AP6023083 (AN) SOURCE CODE: UR/0367/66/003/004/0657/0662

AUTHOR: Abduzhamilov, Sh. ; Azimov, S. A. ; Chernova, L. P. ; Chernov, G. M. ; Chudakov, V. M.

ORG: Institute of Nuclear Physics, Academy of Sciences, Uzbek SSR (Institut yadernoy fiziki akademii nauk uzbekskoy SSR)

TITLE: Coherent interaction of high-energy protons with complex nuclei

SOURCE: Yadernaya fizika, v. 3, no. 4, 1966, 657-662

TOPIC TAGS: proton, high energy protin, photoemulsion, nucleon, particle interaction, proton interaction, inelastic interaction

ABSTRACT: The authors use a method proposed in a previous work [Sh. Abduzhamilov, S. A. Azimov, L. P. Chernova, G. M. Chernov, V. M. Chudakov ZhETF, 47, 24, 1964] to find and analyze in detail the differences between the angular distributions of secondary particles in showers formed by high-energy protons and satisfying the necessary selection criteria for pp and pn collisions in

Card 1/2

L 45314-66

ACC NR: AP6023083

4
photoemulsions. These differences are easily explained by the inclusion of coherent interactions. The method of research is also explained in detail. Experimental data are presented and discussed. The results are discussed of processing the showers formed in photoemulsions by protons with 24 gev and satisfying the necessary criteria of selection of pn collisions. Measurements have been made previously by the authors, the number of particles being $n \geq 4$. The differences found indicate the possible existence of coherent interactions of protons with complex nuclei among the showers with three and four secondary charged particles at 10 and 24 gev. The authors also used measurements made at the Laboratory of High Energies of the Joint Nuclear Research Institute (Olyal) during investigation of inelastic pn interactions of protons with an energy of 10 gev with free and quasi-free nucleons of the photoemulsion. The authors are grateful to V. I. Veksler for permission to use the experimental data obtained at the LVE Olyal, and to M. I. Podgoretskiy for discussions of the work. Orig. art. has: 2 figures, 15 formulas, and 1 table. [GC]

SUB CODE: 20/ SUBM DATE: 12Mar65/ ORIG REF: 002/ OTH REF: 001/

Card 2/2 mjs

KOMKOV, I.P., prof.; RYBALTOVSKIY, O.V., dotsent; DIVINSKIY, A.F., kand.
khim. nauk; CHERNOVA, L.V., laborantka; KHATIN, M.G., prof.;
SHUSTOV, Yu.P.

Preparation D-33 as an activating agent for chlorophos.
Veterinariia 41 no.2:58-59 F '64. (MIRA 17:12)

1. Moskovskiy tekhnologicheskii institut myasnoy i molochnoy promyshlennosti (for Komkov, Rybaltovskiy, Divinskiy, Chernova).
2. Vsesoyuznyy nauchno-issledovatel'skiy institut veterinarnoy sanitarii (for Khatin).
3. Glavnyy veterinarnyy vrach sovkhoza "Iskra" Moskovskoy oblasti (for Shustov).

CHERNOVA, M.

36106 Vykhodnoy veslitel' bez smeshcheniya. Radio, 1949, No. 11, S. 53

Output Amplifier without Distortion

S0: Letopis' Zhurnal' nykh Statey, No. 49, 1949

DAVANKOV, A.B.; LAUFER, V.M.; CHERNOVA, M.A.

Synthesis and study of high molecular quaternary ammonium and pyridinium bases soluble in water and organic solvents. Izv. vys. ucheb. zav.; khim. i khim. tekhn. 6 no.3:479-484 '63.
(MIRA 16:8)

1. Moskovskiy khimiko-tekhnologicheskii institut imeni D.I. Mendelyeva.
(Ammonium compounds) (Pyridinium compounds)

KOST, A.N.; TERENT'YEV, P.B.; CHERNOVA, M.A.

Activity of the double bond of substituted 2-vinylpyridines.
Vest. Mosk. un. Ser. 2 Khim. 19 no.2:59-63 ~~Mr~~-Ap'64
(MIRA 17:6)

1. Kafedra organicheskoy khimii Moskovskogo universiteta.

BEREZOVSKIY, V.M.; ARTEMKINA, R.V.; CHERNOVA, M.A.

Nucleotides, coenzymes, and phosphoric esters. Part 6: Separation
and hydrolytic splitting of phosphoric esters of riboflavine. Zhur.
ob. khim. 35 no.4:677-681 Ap '65. (MIRA 18:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut.

CHERNOVA M L

CHERNOVA, M. L.

"Geometric Properties of Motor Transformations." Leningrad State Pedagogic Inst imeni A. I. Gertsen, Chair of Geometry, Leningrad, 1955.
(Dissertation for the Degree of Candidate of Mathematical Sciences.)

SO: M-972, 20 Feb 56

CHERNOVA, M.M.

CHERNOVA, M.M. (Dnepropetrovsk)

Glycemic reactions in cranial trauma. Klin. med. 32 no.4:88
Ap '54. (MLRA 7:7)

1. Iz propedevticheskoy terapevticheskoy kliniki (dir. prof. K.I.Stepashkina) Dnepropetrovskogo meditsinskogo instituta.
(HEAD, wounds and injuries,
*blood sugar in)
(BLOOD SUGAR, in various diseases,
*head inj.)
(WOUNDS AND INJURIES,
*head, blood sugar in)

CHERNOVA, M. M., Cand Med Sci -- "Results of the ^{treatment} ~~therapy~~ of
gastric and duodenal ulcers ^{with} ~~by~~ the perirenal novocaine
blockade in the light of ^{an extensive} ~~changes~~ of certain carbon-metabolism
indices." Dnepropetrovsk, 1959. (Min of Health UkSSR.
Dnepropetrovsk State Med Inst) (KL, 8-61, 266)

- 537 -

ABARINOV, A.A., prof.; SEMENOV, A.V., inzh.; CHERNOVA, M.F., inzh.

Preparing elements of sheet steel spherical structures. Prom. strof.
42 no.10:24-26 0 '64. (MIRA 17:11)

CHERNOVA, M.P.

Fauna of blood-sucking mosquitoes in the area of Gorkiy Hydroelectric
Power Station. Med. paraz. i paraz. bol. 34 no.1:110-111 Ja-F '65.

(MIRA 18:8)

1. Sanitarno-epidemiologicheskaya stantsiya Gorodetskogo rayona
Gor'kovskoy oblasti.

ABARINOV, A.A., prof.; CHERNOVA, M.P., inzh.

Mechanical and technological properties of 10G201 sheet
steel. Proc. stroi. 43 no.10:32-34 '65. (MIRA 18:11)

SAPOZHNIKOV, Mikhail Mikhaylovich [deceased]; GORYACHEVA, Inna
Aleksandrovna; SAMOSATSKIY, Nikolay Nikolayevich;
CHERNOVA, M.S., red.

[Plastic pipes in housing construction] Plastmassovye
truboprovody v zhilishchnom stroitel'stve. Leningrad,
Lenizdat, 1964. 126 p. (MIRA 18:12)

ANDREYEV, V.; CHERNOVA, N.

What an underevaluation of production potentialities leads to.
Sots.trud no.2:91-94 F '56. (MLIA 9:7)
(Taganrog--Boilers) (Efficiency, Industrial)

CHERNOVA, N.A.

Conditioned respiratory reflex in fish. Trudy Inst.fiziol. no.2:364-369
'53. (MIRA 7:5)

1. Laboratoriya interotseptivnykh uslovnnykh reflektsov Instituta fiziologii im. I.P.Pavlova Akademii nauk SSSR i Laboratoriya fiziologii vysshey nervnoy deyatel'nosti Leningradskogo Gosudarstvennogo ordena Lenina universiteta im. A.A.Zhdanova (zaveduyushchiy - E.Sh.Ayrapet'yants).
(Conditioned response) (Fishes--Physiology)

*Lab. of Interoceptive Conditioned Reflexes of the Inst. of
Physiology im I. P. Pavlov, Acad. Sci USSR & Lab. of
Physiology of Higher Nervous Activity of Leningrad
State OL Univ. im A A Zhdanov*

CHERNOVA, N.A.

Method of studying conditioned feed and defense reflexes in fishes.
Uch. zap. LGU no.239:127-134 '58. (MIRA 12:1)

1. Laboratoriya fiziologii vysshey nervnoy deyatel'nosti Fizio-
logicheskogo instituta Leningradskogo gosudarstvennogo universiteta.
(CONDITIONED RESPONSE) (FISHES AS LABORATORY ANIMALS)

CHERNOVA, N.A.

Influence of small concentrations of carbon dioxide on conditioned
food reflexes in carp. Vop. srav. fiziol. anal. no. 1:196-208 '60.
(MIRA 14:4)

1. The Higher Nervous Activity Physiological Laboratory, University
of Leningrad.

(CONDITIONED RESPONSE) (CARBON DIOXIDE—PHYSIOLOGICAL EFFECT)

CHERNOVA, N.A.

Differentiated trappean intrusion of Zub Mountain in the Noril'sk
area. Geol.i geofiz. no.5:65-72 '61. (MIRA 14:6)

1. Noril'skaya kompleksnaya geologorazvedochnaya ekspeditsiya.
(Noril'sk Region--Rocks, Igneous)

S/032/63/029/001/014/022
B104/B186

AUTHORS: Granovskiy, Yu. V., Chernova, N. A., Adler, Yu. P.,
Nalimov, V. V., Komissarova, L. N., and Spitsyn, Vik. I.

TITLE: A mathematical model for the extractive separation of
hafnium and zirconium by tributyl phosphate

PERIODICAL: Zavodskaya laboratoriya, v. 29, no. 1, 1963, 60-65

TEXT: Improvement of the conditions for separating zircon and hafnium
from nitric acid solutions using tributyl phosphate is studied by the
Box-Wilson method (G. E. Box, K. B. Wilson, J. Roy Stat. Soc. (B), 13, 1
(1951)). The following independent variables were selected: \bar{X}_1 is the
concentration of the metals for the sum of $Zr(Hf)O_2$ (g/l); \bar{X}_2 is the
concentration of the acid in the aqueous initial solution (gramm
equivalent/liter); \bar{X}_3 is the concentration of the tributyl phosphate in
o-xylene (volume-%); \bar{X}_4 is the phase ratio $V_D : V_B$. The optimization
parameter is the separation factor y . Different series of experiments
Card 1/3

A mathematical model for the ...

S/032/63/029/001/014/022
B104/B186

show the appropriate programming matrices with the results. These are used to determine the direction in which the independent variables must be varied. For the separation factor the regression equation

$$\begin{aligned}
\hat{y} = & 13.3478 - 0.1496X_1 + 1.5036X_2 - \\
& - 0.6393X_3 + 0.2635X_4 + 0.1078X_1^2 - \\
& - 1.3422 X_2^2 - 0.7798 X_3^2 + 0.0200X_4^2 - \\
& - 0.0181 X_1X_2 + 0.4756 X_1X_3 + \\
& + 0.6432X_1X_4 - 0.1431 X_2X_3 - \\
& - 0.0506X_2X_4 + 0.1931X_3X_4.
\end{aligned}$$

is obtained, where $X_i = (\tilde{X}_i - \tilde{X}_{i0})/\tilde{X}_{iA}$, \tilde{X}_i is here the value of the natural variable, \tilde{X}_{i0} and \tilde{X}_{iA} are the values of the reference point in the phase space and the variation interval. This equation describes the experimental results. By displacement along the coordinate axes X_i , separation factors (22,8 and 28,2) could be obtained which were larger than those hitherto known. Further, the model can be used to compensate

Card 2/3

A mathematical model for the '...

S/032/63/029/001/014/022
B104/B186

uncontrolled changes of one or several variables by changing other variables arbitrarily. There are 1 figure and 4 tables.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet i Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy redkometallicheskoj promyshlennosti
(Moscow State University and State Design and Planning Scientific Research Institute of the Rare Metals Industry)

Card 3/3

NALIMOV, Vasilii Vasil'yevich; CHERNOVA, Nataliya Andreyevna;
GRIGOROVA, V.A., red.

[Statistical methods of planning extremum experiments] Sta-
tisticheskie metody planirovaniia ekstremal'nykh eksperimentov.
Moskva, Nauka, 1965. 340 p. (MIRA 18:8)

10

CN

Catalytic transformation of 2-methylbicyclo[2.2.1]-5-heptene and 2-methylbicyclo[2.2.1]heptane. B. A. Kazanskii and N. G. Chernova. *J. Gen. Chem. (U. S. S. R.)* 8, 651-2 (1938); cf. *C. A.* 29, 6224¹. When 2-methylbicyclo[2.2.1]-5-heptene (I) was hydrogenated in the vapor phase with Pt charcoal at 125-30° instead of 500° the product was not a heterogeneous mixt. (cf. Zelinskii, Kazanskii and Plate, *C. A.* 27, 5725), but 2-methylbicyclo[2.2.1]heptane (II) previously obtained from I with H and Pd sponge at room temp. I is not dehydrogenated in the presence of Pt charcoal in N at 300° but gives some high-boiling products which poison the catalyst. II with Pt charcoal and excess H at 300-10° undergoes a cyclic cleavage with the formation of monocyclic pentanes and paraffins. The catalyzate contains traces of aromatic hydrocarbons (*m*-xylene). This indicates the cleavage of the -C-C- bond forming the methylene bridge. C. B.

ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION

6-2

PROCESSED AND TRANSMITTED BY

10

Synthesis of 10-alkyl derivatives of 9-methyl-1,2-benzanthracene. B. M. Mikhailov and N. U. Chetaniya. *Compt. rend. acad. sci. U. R. S. S. 20, 670-81 (1968) (in Russian).*—Cyclization of 19 g. 2-(1-C₁₀H₇CHMe)C₁₁H₁₀ by heating with 35 g. anhyd. ZnCl₂ at 180° for 1 hr. gave 70% 9-methyl-1,2-benzanthrone, m. 105-6.5° (m. 106.4-7.3°, recrystd. from Me₂CO). Treatment of the latter with appropriate RMgX compds. gave the following 1,2-benzanthracene derivs.: 9,10-dimethyl, yellow, m. 122-3° (cf. Buchmann and Chermida, C. A. 32, 4978°, and Newman, C. A. 32, 4978°), in 39% yield (*monopicate*, black, m. 112.2-13.2°); 9-methyl-10-ethyl, yellow, m. 70-71.5°, by decompn. of the *dipicrate*, carmine-red, m. 110-10.8°; 9-methyl-10-propyl, light green, m. 90-101°, by decompn. of the *dipicrate*, red, m. 83.8°; 9-methyl-10-butyl, light yellow, m. 71.2° (30% yield), by decompn. of the *dipicrate*, red, m. 104.0-5.8°.

John P. Lutz

ASD-31A METALLURGICAL LITERATURE CLASSIFICATION

CA

Lab. of Sterols,
All-Union Inst. of
Exper. Med.

10

SYNTHESIS AND PROPERTIES OF
Tetrahydro-1,2-benzanthracen-9-one. N. G. Chernova
and B. M. Mikhaïlov. *J. Gen. Chem. (U.S.S.R.)* 9,
2168-70(1939).—Cyclization of *o*-(*o*-tetralyl)methylben-
zoic acid (I) was studied by heating 45 min. 10 g. I and 30
g. of powd. anhyd. ZnCl₂ in an oil bath at 180°, decomp.
the mixt. with dil. HCl and extg. with CHCl₃. After the
removal of unaltered I with Na₂CO₃ soln. and the CHCl₃
by evapn., the residue was recrystd. from C₆H₆, giving
85% of 9-methyl-1,2,3,4-tetrahydro-1,2-benzanthracen-9-one,
m. 142-3° (142°, Braun, *et al.*, *C. A.* 22, 1580). Concn. of the mother liquor
yielded 7% 1',2',3',4'-tetrahydro-1,2-benzanthracen-9-one
(II), m. 100-9.7°. Grignard reaction of 0.5 g. II in 25
ml. C₆H₆ and MeMgI (from 0.5 g. Mg, 3 g. MeI and 25
ml. ether) gave 48% 9-methyl-1',2',3',4'-tetrahydro-1,2-
benzanthracene, m. 122.6-4.2°; picrate, m. 125.5-6.2°.
II. The Reformatski reaction with 9-methyl-1,2-ben-
zanthracen-10-one. B. M. Mikhaïlov and N. G. Cher-
nova. *Ibid.* 2171-2.—A mixt. of 12 g. of 9-methyl-1,2-
benzanthracen-10-one, 10.3 ml. BrCH₂CO₂Et and 6.9 g.
Cu-Zn in 40 ml. of dry C₆H₆ was heated until the violent
reaction had begun and the source of heat was removed.
The reaction mixt. was then refluxed on a water bath for
7 hrs. and decompd. with ice water and dil. HCl. Evapn.
of the C₆H₆ and recrystn. of the residue from alc. yielded
44% of Et 9-methyl-1,2-benzanthr-10-yl acetate, m. 81.6
3°. The acetate, sapond. with 10% KOH in alc., gave the
free acid; amide, m. 270-2° (decompn.). The acid on
heating at 200° or at 180° with the addn. of ZnCl₂ split
CO₂ and gave 9,10-dimethyl-1,2-benzanthracene, m. 121-
2.4° Chas. Blanc

ASB-11A METALLURGICAL LITERATURE CLASSIFICATION

CHERNOWA, N. G.

"Syntheses of polycyclic compounds. V. 4', 5-ace-3, 4-benzopyrene." Mikhailow, B. M.,
and Chernowa, N. G. (p. 282)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1942, Vol 12, No 5-6.

CHERNOMA, N. G.

"Syntheses of polycyclic compounds. VII. On 9, 10-dephenyl - 1', 2', 3', 4' - tetrahydro-1,2-benzanthracene." Mikhailow, B. M., and Chernoma, N. G. (p. 295)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1942, Vol 12, No 5-6.

CHERNOWA, N. G.

"Synthesis of polycyclic compounds. 1,4,5-ace-3,4-benzopyrene." Mikhailow, B. M., and Chernowa, N. G. (p. 531)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1942, Vol 12, No 9-10.

CA

10

Structure of organic compounds of alkali metals. The complex nature of the lithium organic compound of tetraphenylethylene. B. M. Mikhailov and N. G. Chernova. *Doklady Akad. Nauk S.S.S.R.* 70, 237-9 (1950).—Since many metalloorg. compds. contg. 2 alkali-metal atoms exist in colorless or colored forms, depending upon the presence or absence of polar solvents like Et_2O in the medium, the possibility of Et_2O actually taking part in the formation of colored forms was investigated. Shaking 0.5 g. $\text{Ph}_2\text{C}=\text{CPh}_2$ and 0.05 g. sliced Li in 00-75 ml. dry Et_2O in a N-filled sealed tube over 90 hrs. and mech. removal of the red product, drying *in vacuo* to essentially constant wt., and treatment with $\text{Et}_2\text{O}-\text{MeOH}$ gave 1,1,2,2-tetraphenylethane, m. 205-8°; the wt. difference between the latter and the red complex, with allowance for the Li content (obtained by titration of the aq. layer) gave the compn. of the complex as a combination of 1 mol. hydrocarbon, 2 atoms Li, and 1 mol. Et_2O , possibly formed by a doubly neg. ion of $(\text{Ph}_2\text{C})_2$ and a doubly pos. ion of Li_2OEt_2 . It is suggested that Et_2O may form an integral part of many other alkali-metal complexes and substances like Ph_2CNa , when prepd. in Et_2O solns. It is believed that all alkali-metal org. compds. are of 2 types: those with a C—M bond of essentially covalent type with partly ionic character, and those which are colored and have a true complex ionic structure; class 1 covers metal-alkyls and metalarylals which are nonconductors in Et_2O soln.

G. M. Kosolapoff

1957

CA

10

The complex nature of the colored organic compounds of alkali metals. B. M. Mikhailov and N. G. Chernova (Acad. Med. Sci. U.S.S.R., Moscow). *Doklady Akad. Nauk S.S.S.R.* 74, 919-42 (1950). By complete elementary analysis, Ph_2CNa in soln. in Et_2O actually forms a complex of the compn. $\text{Ph}_2\text{CNa}_2\text{F}$ and the structure $[\text{Ph}_2\text{C}]^-$

$[\text{Na.OEt}]^+$; failure by Schlenk and Markus (C.A. B. 2728) to detect that complex was due to incomplete analysis. The corresponding Li complex has the compn. $\text{Ph}_2\text{CLi}_2\text{E}$ and the structure $[\text{Ph}_2\text{C}]^-[\text{Et}_2\text{O.Li.OEt}]^+$. Further complexes in Et_2O sola. are: $\text{Ph}_2\text{C}:\text{CPh}_2$, $2\text{Na}_2\text{E}$; $\text{PhCH}:\text{CPh}_2$, $2\text{Na}_2\text{E}$; $\text{PhCH}:\text{CPh}_2$, $2\text{Li}_2\text{E}$, and the anthracene (A) complex $\text{A} \cdot 2\text{Li}_2\text{E}$ and $\text{A} \cdot 2\text{Na}_2\text{E}$; in the latter complex, Schlenk, et al. (C.A. B. 1580), failed to detect the E owing to faulty analysis. The following amine complexes were obtained in soln. in the corresponding amine: $\text{PhCH}:\text{CPh}_2$, $2\text{Na} \cdot \text{Et}_3\text{N}$ (black); $\text{PhCH}:\text{CPh}_2$, $2 \text{Li} \cdot \text{Et}_3\text{N}$ (carmine-red); $\text{Ph}_2\text{C}:\text{NPh}$, $2\text{Li} \cdot \text{Et}_3\text{N}$ (dark carmine-red); $\text{Ph}_2\text{C}:\text{NPh}$, $2\text{Na} \cdot \text{Et}_3\text{N}$ (carmine-red); a Na-A complex in Et_3N (black); Na-A and Li-A complexes in PhNMe_2 (red); Na- $\text{Ph}_2\text{C}:\text{CPh}_2$ in PhNMe_2 (black); Na- $\text{Ph}_2\text{C}:\text{NPh}$ in PhNMe_2 (red), and the corresponding Li complex (purple-red). The presence of 2 metal (M) atoms in the $\text{PhCH}:\text{CPh}_2$ complexes with Et_3N suggests the structure $[\text{PhCHM}:\text{CPh}_2]^-[\text{M-NEt}_3]^+$. Of the 2 possible structures of the $\text{Ph}_2\text{C}:\text{NPh}$ complexes, the more plausible one is $[\text{Ph}_2\text{C}:\text{NPh}]^-[\text{M-NEt}_3]^+$, i.e., with the metal bound to the C atom rather than the N atom of the $\text{Ph}_2\text{C}:\text{NPh}$. The most plausible structures for the Et_2O complexes are, resp., $[\text{Ph}_2\text{CLi}:\text{CPh}_2]^-[\text{Li-OEt}]^+$ and $[\text{Ph}_2\text{CNa}:\text{CPh}_2]^-[\text{Et}_2\text{O-Na-OEt}]^+$. The structures proposed for the other complexes are: $[\text{PhCHM}:\text{CPh}_2]^-[\text{M-OEt}]^+$, $[\text{Li-Na}]^-[\text{Na-OEt}]^+$, and $[\text{Li-Li}]^-[\text{Et}_2\text{O-Li-OEt}]^+$ N. Thou

Aug 51

Chemistry - Phenanthrene Derivatives I. Syn-

Research Into the Phenanthrene Derivatives With the Aid
of Organic Lithium Compounds, B. M. Mikheylov, Acad
Chernova, Inst of Gen and Exptl Petrol, Acad
Med Sci USSR

"Zhur Obshch Khim" Vol XXI, No 8, pp 1517-1524
To synthesize phenanthrene derivs, use of org Li
compd of phenanthrene has advantage using org Mg
conversion and yield over phenanthrene derivs
comps. Prep'd several new phenanthrene of phenanthrene
using org Li compe. Bromination of phenanthrene
Aug 51

USSR/Chemistry - Phenanthrene Derivatives (Contd)

9-methylphenanthrene with Br₂ yields 9-bro-
mophenanthrene and 9-methyl-10-bromophenanthrene,
resp.

189120

CHERNOVA, N. G.

CHEERNOVA, N. G.

USSR/Chemistry - Organo-Lithium Compounds 11 Jun 52

"Complex Formation in a Series of Organic Compounds of Lithium, B. M. Mikhaylov, N. G. Chernova, Inst of Normal and Pathol Morphol, Acad Med Sci SSSR

"Dok Ak Nauk SSSR" Vol LXXXIV, No 5, pp 967 - 970

There are 9 theoretically possible types of compds of lithium having a coordination number of 4. They are complexes of lithium with ethers, dioxanes, amines, and hydrocarbon radicals. Complex compds of aromatic Li derivs were also found to exist. Dioxane and amine complexes were prepd. Presented by Acad A. N. Nesmeyanov 8 Apr 52.

223T13

CHERNOVA, N. G.

"Constitution of Organic Compounds of Alkali Metals: Lithium Aryls and Their Ether Addition Compounds," B. M. Mikhaylov, N. G. Chernova, Inst Norm and Patrol Morphol, Acad Med Sci USSR

"Dok Ak Nauk SSSR" Vol LXXVIII, No 3, pp 489-492, 1952

Prior work by authors (1950) established that Na and Li derivs of triarylmethyls, phenylated ethylenic hydrocarbons, dehydrodrivis of condensed polynuclear hydrocarbons, and azomethines (organometallic compds that are colored and conduct electricity) are complex compds contg ether or tertiary amine. When

186710

USSR/Chemistry - Lithium Compounds 21 May 51
(Contd)

phenyl, alpha-naphthyl 9-phenanthryl, or 9-anthryl Li is prepd by reacting n-BuLi with aryl bromides in benzene, simple ArLi compds are formed. In ether soln, complex Li aryl-ether adducts are formed.

OK
186710

MIKHAYLOV, B.M.; CHERNOVA, N.G.

Structure of metallic compounds of aromatic ketones. Doklady Akad.
Nauk S.S.S.R. 85, 341-4 '52. (MLRA 5:8)
(CA 47 no.15:7467 '59)

SECRET NA VA N 9

and R. M. Mikhalov

On Dioxane- and Dioxane Benzene Complexes of the
Lithium-Aromatic Compounds

SOV/79-29-1-47/74

observation also the earlier obtained complex compounds of lithium aryls were quantitatively investigated with respect to dioxane in which connection it was found that in some of them the amount of lithium aryl and dioxane amounted to 72-86% of the complex weight. Thus, the conclusion was drawn that benzene which was used as solvent forms also part of the complex (Ref 2). Tables 1 and 2 may serve as illustrations of this case. Summarizing, the following investigation results are to be mentioned: In the case of action of benzene solution of n-butyl lithium upon aryl bromides in the presence of dioxane, dioxane-benzene complexes of the lithium-aromatic compounds of the composition $2\text{ArLi} \cdot 2\text{C}_4\text{H}_8\text{O}_2 \cdot \text{C}_6\text{H}_6$ are formed. These complexes form phenyl lithium, p-tolyl lithium, o-tolyl lithium, p-chlorophenyl lithium and 3-pyrenyl lithium. 9-phenanthryl lithium and 9-anthryl lithium form correspondingly the complexes $\text{ArLi} \cdot \text{C}_4\text{H}_8\text{O}_2$ and $\text{ArLi} \cdot 2\text{C}_4\text{H}_8\text{O}_2$. In the case of action of the hexane solution of n.-butyl lithium upon the aryl bromides in the presence of dioxane

Card 2/3

On Dioxane- and Dioxane Benzene Complexes of the
Lithium-Aromatic Compounds

SOV/79-29-1-47/74

the complexes $2 \text{ArLi} \cdot 3\text{C}_4\text{H}_8\text{O}_2$ or $\text{ArLi} \cdot 2\text{C}_4\text{H}_8\text{O}_2$ are obtained.
Thus the nature of the solvent exercises an influence upon
the composition of the dioxane complexes of the lithium-
aromatic compounds. There are 3 tables and 13 references,
8 of which are Soviet.

ASSOCIATION: Institut eksperimental'noy patologii i terapii raka
(Institute of Experimental Cancer Pathology and Therapy)

SUBMITTED: November 5, 1957

Card 3/3

5(3)
AUTHORS: Chernova, N. G., Yaguzhinskiy, L. S., Berlin, A. Ya. SOV/20-126-4-31/62
TITLE: The Synthesis of β -(p-di-(2-Chloroethyl)-aminophenyl)- β -alanine
(Sintez β -(p-di-(2-khloretilyl)-aminofenil)- β -alanina)
PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 4, pp 802-805
(USSR)
ABSTRACT: As is known, "Sarcocystine" (p-di-(2-chloroethyl)-amino- β -phenyl-2-alanine) possesses a high anti-tumor activity in the experiment as well as in the clinic (Refs 1, 2). It therefore was of interest for the authors to synthesize the chemically related substance, as mentioned in the title (I). It is a derivative of β -amino acid. β -(p-nitrophenyl)- β -N-acetyl- β -alanine (II), produced according to V. M. Rodionov's method, served as initial substance. Since the synthesis was difficult, due to a protection of the β -amino group by the rest of acetyl, and as the output was small (15%) a second way was studied: with a phthaloyl protection of the β -amino group. It proved completely satisfactory. The first way is described. Investigating the second way, β -(p-nitrophenyl)- β -alanine (VII) (Ref 3) was used as initial substance. It was esterized by means of an alcoholic HCl solution. A successive treatment with phthalic acid anhydride and acetic acid anhydride (Ref 5) converted the β -(p-nitrophenyl)- β -alanine-ethylester (VIII)

Card 1/2

SOV/20-126-4-31/62

The Synthesis of β -(p-di-(2-Chloroethyl)-aminophenyl)- β -alanine

immediately into β -(p-nitrophenyl)- β -N-phthaloyl-alanine-ethylester (IX). (IX) was synthesized into β -(p-aminophenyl)- β -N-phthaloyl- β -alanine-ethylester (X) by means of hydration in the presence of skeleton nickel. Analogous to the transformations of (IV) into (I), several successive syntheses of a phthaloyl compound (X) were carried out without isolating the intermediate products: β -(p-di-(2-oxyethyl)-aminophenyl)- β -N-phthaloyl- β -alanine-ethylester (XI) (Ref 6), β -(p-di-(2-chloroethyl)-aminophenyl)- β -N-phthaloyl- β -alanine-ethylester (XII), chlorine hydrate (I) as well as base (I). The latter was produced with a yield of 40%. There are 6 references, 3 of which are Soviet.

ASSOCIATION: Institut eksperimental'noy patologii i terapii raka Akademii meditsinskikh nauk SSSR (Institute of Experimental Pathology and Cancer Therapy of the Academy of Medical Sciences, USSR)

PRESENTED: February 7, 1959, by M. M. Shemyakin, Academician

SUBMITTED: January 13, 1959

Card 2/2

CHERNOVA, N.G.; RYBKINA, Ye.I.; BERLIN, A. Ya.

Aryl- β -amino acids. Part No.4: V.M. Rodionov reaction with
some aryl aliphatic aldehydes. Synthesis of δ -[p-di(2-chloroethyl)
aminophenyl]- β -aminovaleric acid. Zhur. ob. khim. 34 no.7:
2129-2133 J1 '64 (MIRA 17:8)

1. Institut eksperimental'noy i klinicheskoy onkologii AMN
SSSR.

CHERNOVA, N.G.; RYBKINA, Ye.I.; LEVINE, A.Ye.

Synthesis of β -Amino acids. Part 5: 6- β -[α - β -(2'-chloroethyl) amino-phenyl]ethyl-5,6-dihydrocavil. Zhur.org.khim. 1 no.3:598-600 Mr '65. (MIRA 18:4)

1. Institut eksperimental'noy i klinicheskoy onkologii ANU SSSR.

CHERNOVA, N. I.

COUNTRY : USSR.

CATEGORY : Zoological Parasitology. Acarids and Insects as Disease Vectors. Insects. 4

ABS. JOUR. : RZhBiol., No. 14, 1958, No. 62675.

AUTHORS : Doynikov, A. V.; Derevyanchenko, K. I.;

INST. : The Astrakhan' Anti-Plague Station.

TITLE : Fleas of the Rodents in the Sand Zone of the Astrakhanskaya Oblast's Left Bank Territory.

ORIG. PUB. : Sb. tr. Astrakhansk. protivochymn. st., 1955. vvp. 1, 302-355.

ABSTRACT : For 1947-1950, there were collected on the southwestern Volga-Ural sands mainly from the crested (OSE) and midday (MSE) gerbils 222,057 fleas. The little beasts, the entrances into burrows (by means of raking) and the nests (with the help of digging) were examined. 26 flea species were discovered. "Actual" (obtained by a careful registered collection) abundance indices (I) of the

CARD: 1/7

*Kazantseva, Yu. M.; Chernova, N. I.

COUNTRY :
CATEGORY :
ABS. JOUR. : 1 3 No 62675 . G
AUTHOR :
INST. :
TITLE :
ORIG. PUB. :
ABSTRACT : and *X. conformis* equalled, respectively, 0.43
and 0.20 on CSE and 0.15 and 0.17 on MSE.
C. laeviceps are approximately the same on the
gerbils and in the burrow entrances, and the I
of *X. conformis* is 1.5-3 times higher than on
the gerbils. According to the I changes, the
authors consider that the numbers of *C. laevi-*
ceps are greatest in March (the I of CSE are
up to 1.79) and in November (up to 1.13) and
CARD: 3/7

COUNTRY :

CATEGORY :

ABS. JOUR. :

No. 62675.

G

AUTHOR :

INST. :

TITLE :

ORIG. PUB. :

ABSTRACT :

ary (1.7). The authors assume that the fleas of this species develop in the summer burrows and bear, on the whole, one generation in a year. Due to the fact that the I of X. conformis on the gerbils are very high all summer through, a conjecture was formed that the life span of the imago at this time was long (up to 5 months). During 1947-1950, considerable fluctuations of the fleas' I on the gerbils were

CARD: 5/7

COUNTRY	:	
CATEGORY	:	
ABS. JOUR.	:	No. 62675. 4
AUTHOR	:	
INST.	:	
TITLE	:	
ORIG. PUB.	:	
ABSTRACT	:	noted; the greatest changes were produced by X. conformis (from -84 to +253%, in comparison with the mean for 3 years); dependence on weather conditions was not established; the greatest I for the 3 species of the gerbils' fleas were particularly marked in a year of sharp increase in the density of their nests' population. Certain data on fleas of other rodents were submitted. On the mole-rat (over 9000 specimens examined), among the 214 collected fleas 179 turned out to G. laeviceps and X.
CARD:	:	5/7.

CHERNOVA, N. I.

USSR / General and Specialized Zoology. Insects. P
Insect and Mite Pests.

Abs Jour : Ref Zhur - Biol., No 10, 1958, No 44784

Author : Chernova, N. I.

Inst : Not given

Title : The Effect of Fall Row Watering on the Number
of Alfalfa Seedling Pests.

Orig Pub : Zashchita rast. ot vredit. i boleznoy, 1957,
No. 5, 29-31.

Abstract : No abstract given.

Card 1/1

CHERNOVA, N. I.

Chernova, N. I., - The Age of Granitoids of the Trans-Baykal Determined
by Means of the Argon Method.

The Sixth Session of the Committee for Determining the Absolute Age of
Geologic Formations at the Department of Geologic-Geographical Sciences
(OGGN) of the USSR Academy of Sciences at Sverdlovsk in May 1957

CHERNOVA, N.I.

Characteristics of the behavior of various alfalfa pests and injuries
inflicted by them. Trudy VIZR no.10:62-79 ' 58: (MIRA 12:1)
(Alfalfa--Diseases and pests)

SIDORENKO, G.A.; CHERNOVA, N.I.

X-ray studying of the bone phosphate of fossil fishes in
the Soviet Union. Rent. min. syr. no.2:81-87 '62.

(MIRA 16:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'-
nogo syr'ya.

NEL'ZINA, Ye.N.; DANILOVA, G.M.; CHERNOVA, N.I.

Number and spatial distribution of the micropopulations of
bloodsucking Arthropoda within the microbiotopes of the
suslik *Citellus pygmaeus*. Med. paraz. i paraz. bol. 32
no.1:45-55 Ja-F'63. (MIRA 16:10)

1. Rostovskiy-na-Donu nauchno-issledovatel'skiy protivochum-
nyy institut i Astrakhanskaya protivochumnaya stantsiya.

*

MIRONOV, N.P.; NEL'ZINA, Ye.N.; KLIMCHENKO, I.Z.; REZINKO, D.S.; CHERNOVA, N.I.;
DANILOVA, G.M.; SAMARINA, G.P.; RODIONOVA, A.V. -

Spatial distribution of fleas in the burrows of the lesser
suslik (*Citellus pygmaeus*) and efficient methods of estimating
their abundance. Zool. zhur. 42 no.3:384-394 '63.

(MIRA 17:1)

1. Rostov-on-Don Research Anti-Plague Institute, and Astrakhan
Anti-Plague Station.

NEL'ZINA, Ye.N.; CHERKOVA, H.L.; VOROVA, I.M.; BYLENKO, H.S.

Role of *Ornithonissus bacoti* (S. Hirst, 1913) (Parasitiformes, Gamasides) in natural foci of plague; author's abstract. Med. parazit. i parazit. bol. 34 no.3:357-358 Ty-Je '65.

(MIRA 18:7)

1. Postovskiy-na-Donu nauchno-issledovatel'skiy protivoshumnyy institut i Astrachanskaya protivoshumnaya stantsiya.

CHERNOVA, N.I.

Determination of critical parameters for two-component
liquid demixing systems. Zhur.fiz.khim. 39 no.10:2388-
2393 0 '65. (MIRA 18:12)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

CHERNOVA, N. M.

Dissertation: "The Vegetation Cover of the Western Meadows (Yayla) of the Crimea and Their Agricultural Use." Cand Biol Sci, Inst of Botany imeni V. L. Komarov, Acad Sci USSR, Moscow, Oct-Dec 53. (Vestnik Akademii Nauk, Moscow, Jun 54)

SO: SUM 318, 23 Dec 1954

ЧЕРНОВА, Н. М.

KOVERGA, Anatoliy Sofronovich; CHERNOVA, N.M.

[Nikita Botanical Gardens] Nikitskii botanicheski sad imeni V.M.
Molotova; putevoditel'. Simferopol', Krymizdat, 1956. 143 p.
(Nikita (Crimea)--Botanical gardens) (MLRA 10:9)

CHERNOVA, NINA MIKHAYLOVNA

318N/5
724.2
.05

Dikorastushchiye kormovyye travy Kryma (Wild-growing fodder grass in the Crimea) Kiyev, Izd-vo Akademii Nauk Ukrainskoy SSR, 1957.

146 p. illus., tables.

At head of title: Akademiya Nauk Ukrainskoy SSR. Krymskiy Filial.

"Literatura": p. 138-141.

VUL'F, Yevgeniy Vladimirovich [deceased]. Prinsipalni uchastnye:
CHERNOVA, N.M., botanik; PRIVALOVA, L.A., botanik; ZEFIROV, B.M.,
botanik. STANKOV, S.S., prof., red.; ROSSOSHANSKIY, A.A., red.;
GOR'KOVA, Z.D., tekhn.red.; ZUBRILINA, Z.P., tekhn.red.

[Flora of the Crimea] Flora Kryma. Pod red. S.S.Stankova.
Moskva, Gos.izd-vo sel'khoz.lit-ry. Vol.3., no.1. [Dicotyledoneae
Ericaceae-Oleaceae] Dvudol'nye vereskovye - maslinnye. 1957.
84 p. (MIRA 12:5)

1. Gosudarstvennyy Nikitskiy botanicheskiy sad (for Chernova,
Privalova, Zefirov).
(Crimea--Dicotyledons)

VUL'F, Ye.V. [deceased]; BORISOVA, A.G. (Leningrad); VASIL'YEV, V.F. [deceased]; POYARKOVA, A.I. (Leningrad); STANKOV, S.S.; KHRZHANOVSKIY, V.G. (Moskva); CHERNOYA, N.M. (Simferopol'); YUZEPCHUK, S.V. [deceased]; PRIVALOVA, L.A., starshiy nauchnyy sotrudnik, red.; ROSSOSHANSKIY, A.A., red.; GUREVICH, M.M., tekhn.red.

[Flora of the Crimea] Flora Kryma. Pod red. S.S.Stankova. Moskva, Gos.izd-vo sel'khoz.lit-ry. Vol.2, no.2. [Dicotyledoneae: Grassulaceae - Leguminosae] Dvudol'nye: tolstiankovye - bobovye. 1960. 311 p. (MIRA 14:1)

1. Gosudarstvennyy Nikitskiy botanicheskiy sad (for Privalova). (Crimea--Dicotyledons)

ZERNOV, P.N.; CHERNOVA, N.M.; BURENKOVA, L.F.

Spinning of silk at variable speed. Khim.volok. no.4:72-74 '60.
(MIRA 13:10)

1. Mogilevskiy zavod.
(Rayon spinning)

CHERNOVA, N.M.

Structure of the frontal plate in click beetle larvae (Coleoptera,
Elateridae) Ent.oboz 39 no.4:838-849 '60. (MIRA 14:3)

1. Laboratoriya pochvennoy zoologii Institut morfologii zhivotnykh
imeni A.N. Severtseva AN SSSR, Moskva.
(Wireworms)

CHERNOVA, N.M.

Dynamics of the number of invertebrates in soil-manure composts.
Agrobiologiya no.6:879-881 N-D '62. (MIRA 16:1)

1. Institut morfologii zhivotnykh imeni A.N.Severtseva,
AN SSSR.
(Compost) (Invertebrates) (Soil fauna)

CHERNOVA, N.M.

Zoological processes in the maturing of peat-manure composts.
Pochvovedenie no.9:95-102 Ag [i. e. S] '63. (MIRA 16:10)

1. Institut morfologii zhivotnykh imeni A.N. Severtsova.
(Compost) (Soil fauna)

CHERNOVA, N.M.

"Effect of fertilizers on soil fauna" by G.Herbke and others.
Reviewed by N.M.Chernova. Zool. zhur. 42 no.8:1280-1282

'63.

(MIRA 16:9)

(Soil fauna) (Fertilizers and manures)
(Herbke, G.)

CHERNOVA, N.M.

Dynamics of the abundance of Collembola (Insecta) in the composts
of fallen leaves. Zool. zhur. 42 no.9:1370-1383 '63.

(MIRA 16:12)

1. Laboratory of Soil Zoology, Institute of Animal Morphology,
Academy of Sciences of U.S.S.R., Moscow.

CHERNOVA, N. N.

Chernova, N. N.

"The Thermochemical Characteristics of the Structure of Collagens." Min
Higher Education USSR. Moscow Technological Inst of Light Industry imeni
L. N. Kaganovich. Moscow, 1955 (Dissertation for the degree of Candidate
in Technical Sciences)

SO: Knizhnaya letopis' No. 27, 2 July 1955

CHERNOVA, N.N.

POLEVAYA, N.I.; ~~CHERNOVA, N.N.~~; MIRKINA, S.L.

Determining small quantities of magnesium by means of radioactive
phosphorus. Inform.sbor. VSEGEI no.1:119-123 '55. (MLRA 9:12)

(Magnesium) (Phosphorus--Isotopes)

27

Determination of small amounts of magnesium with radioactive phosphorus. N. J. ... and S. L. ...
 detn. was conducted in a buffer ... and 2 parts 2.5% NH₃ by ...
 plate soln. (1) contg. ...
 life 14.3 days, β -radiation ...
 being detd. by the change ...
 The sensitivity was 0.5 ...
 method Mg was pptd. with a ...
 of the radioactivity of the dissolved ppt. measured. Thus
 Mg was pptd. with a known amt. of I (contg. 1 mg. of Pb,
 and having a total radioactivity ... washed with
 2.5% NH₃, dissolved in HCl, and ...
 solved ppt. detd. The amt. ...
 = (0.786 Ab)/B, where ...
 Mg to the at. wt. of P. ...
 mg. of Mg can be detd. ...
 (13, 392)

CHERNOVA, N. N.

Possibility of the determination of the absolute age of effusive rocks. N. I. Polevayn, G. A. Murina, and N. N. Chernova. *Doklady Akad. Nauk S.S.S.R.* 105, 523-5 (1955). The method used is that of the A-K⁴⁰ isotopic equilibrium as a function of the time, t , and the consts. for the β -decay, λ_{β} , (4.9×10^{-10} year⁻¹), and that, λ_{α} , of the K decay (6.1×10^{-11} year⁻¹) (cf. Gerling, *et al.*, *C.A.* 50, 131a). An investigation of the A/K⁴⁰ data of 24 siliceous effusive rocks showed that such rocks are suitable for the detn. of the abs. age by this method and that no reason exists to assume that essential losses in A occur during the geol. periods following the genesis of the rocks, also not by devitrification of the

originally glassy rocks. There is a thoroughly regular functional relation between the A/K⁴⁰ ratio and the geol. ages detd. by stratigraphic indications. As an example, a liparite with A/K = 0.0035, granodiorite with 0.0055, and a felsite with 0.0071 have calcd. ages of 60, 90, and 110 million yrs., resp. The other rocks investigated (porphyries; quartz-porphyrines, plagiophyres, orthophyres, etc.) ranged from 50 to 1300 million yrs. W. Eitel

CHERNOVA, N. N.

15-57-7-9539

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 7,
p 116 (USSR)

AUTHORS: Sprintsson, V. D., Chernova, N. N.

TITLE: A Doubled Argon Determination (Sdvoyennaya argonovaya ustanovka)

PERIODICAL: Inform. sb. Vses. n.-i. geol. in-t, 1956, Nr 3, pp 107-109.

ABSTRACT: The authors introduced some modifications in the apparatus constructed by Academician V. G. Khlopin and E. K. Gerling, intended for the quantitative determination of argon. This apparatus can be used to ascertain the age of rocks and minerals by the argon method. Introduction of auxiliary absorbers makes it possible to conduct two simultaneous determinations on a single apparatus. This nearly doubled its usefulness.

Card 1/1

L. I. Afanas'yeva

ISKANDEROVA, A.D. [translator]; MURINA, G.A. [translator]; MIRKINA, S.L.
[translator]; POLEVAYA, N.I. [translator], red.; CHERNOVA, N.H.
[translator]; SHUKOLYUKOV, Yu.A. [translator]; KOLOSKOVA, M.I.,
red.izd-va; GODOVIKOVA, L.A., red.izd-va; AVERKIYEVA, T.A.,
tekhn.red.

[Radiological methods for absolute age determination; articles
translated from the English and the German] Radiologicheskie
metody opredelenia absolutnogo geologicheskogo vremeni; sbornik
statei. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geologii i
okhrane nedr, 1959. 181 p. (MIRA 13:10)
(Geological time)

KUL'BA, F.Ya.; CHERNOVA, N.N.

Study of thiocyanate complexes of thallium in aqueous and water-methanol solutions. Zhur.neorg.khim. 7 no.7:1595-1600 JI '62. (MIRA 16:3)

1. Leningradskiy tekhnologicheskij institut imeni Lensoveta,
kafedra obshchey khimii.

(Thallium compounds)

(Thiocyanates)

KUL'BA, P.Ya.; CHERNOVA, N.N.

Thiocyanate complexes of monovalent thallium in water-ethanol,
water-propanol, and water-isopropanol solutions. Zhur. neorg.
khim. 7 no.8:1902-1907 Ag '62. (MIRA 1686)

1. Leningradskiy tekhnologicheskii institut imeni Lensoveta,
kafedra obshchey khimii.
(Thallium compounds) (Thiocyanates)

BAKHINA, Ye.S.; CHERNOVA, N.N.

Effect of temperature and moisture on some mechanical properties
of larch wood. Der. prom. 14 no.10:7-8 0 '65. (MIRA 18:12)

1. Tsentral'nyy nauchno-issledovatel'skiy mekhanicheskiy
obrabotki drevesiny.

GRINBERG, Ya.M., dotsent; SMIRNOV, I.M.; CHERNOVA, N.P.

Treatment of gastric and duodenal ulcer in night sanatoria. Sov.med.
25 no.1:123-125 Ja '62. (MIRA 15:4)

(PEPTIC ULCER)

24.7760

37720

S/139/62/000/002/016/028
E039/E435

AUTHORS: Krivov, M.A., Malisova, Ye.V., Presnov, V.A.,
Chernova, N.V.

TITLE: The properties of germanium alloyed with titanium

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Fizika.
no.2, 1962, 108-115

TEXT: The Ge-Ti alloy was formed by the diffusion of a thin film of Ti deposited on germanium in a vacuum and then heated to 800°C for 8 hours. The samples were subsequently annealed at 450°C for 7 hours and then cooled slowly. Under these conditions the concentration of Ti changes exponentially with depth in the sample. In order to obtain data for a more uniform distribution, measurements were made on the face of the sample which was initially coated with Ti and then ground after alloying. The electrical conductivity and Hall effect in alloyed and control samples were measured for temperatures in the range 100 to 480°K. The temperature dependence of these parameters for the alloyed samples had the same general form as for Ge. Typical values for the concentration of donors and acceptors in n-type samples are Card 1/2

The properties of germanium ...

S/139/62/000/002/016/028
E039/E435

$N_D = 4.79 \times 10^{15} \text{cm}^{-3}$; $N_a = 4.71 \times 10^{15} \text{cm}^{-3}$ and in p-type
 $N_D = 2.4 \times 10^{15} \text{cm}^{-3}$ and $N_a = 2.58 \times 10^{15} \text{cm}^{-3}$. It is shown that
atoms of Ti have a large diffusion coefficient in Ge
($D = 5.5 \times 10^{-7} \text{cm}^2/\text{sec}$). In the germanium lattice titanium
produces acceptor levels with $\Delta E = 0.2 \text{ eV}$. The adsorption of
atoms of Ti on the surface of Ge is accompanied by a lowering of
the negative surface charge. It is possible to form an inversion
n-type layer on the surface of p-type germanium owing to the
formation of a positive surface charge with the absorption of a
large quantity of Ti atoms. The diffusion of atoms of Ti into
germanium from a film is accompanied by the formation of electron-
hole transitions; hence it can be used in the preparation of
diodes and triodes. There are 5 figures.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom
gosuniversitete imeni V.V.Kuybysheva (Siberian
Physicotechnical Institute at Tomsk State University
imeni V.V.Kuybyshev)

SUBMITTED: August 5, 1961

Card 2/2

CHERNOVA, N.Ye.

Development of obstetric aid in the Issyk-Kul' Valley in the
Kirghiz S.S.R. Sov.zdrav.Kir. no.1:36-42 Ja-F '63.

(MIRA 16:3)

1. Iz kafedry organizatsii zdravookhraneniya i istorii meditsiny
(zav. - prof. A.A. Aydaraliyev) Kirgizskogo gosudarstvennogo
meditsinskogo instituta.

(KIRGHIZSTAN--OBSTETRICS)

CHERNOVA, O.A., inzh.

Investigation of the raw material for the production of ex-
panded perlite in the R.S.F.S.R. Sbor. trud. ROSNIIMS no.25:
19-31 '62 (MIRA 17:8)

POLINKOVSKAYA, A.I., kand. tekhn. nauk; CHERNOVA, O.A., inzh.; ABRAMOV, I.Ya.
inzh.

Producing expanded perlite in furnaces with fluidized beds.
Sbor trud. ROSNIIMS no.25:63-71 '62 (MIRA 17:8)

CHEPNOVA, O.A., inzh.; SHEYMAN, Ye. S., inzh.

Producing expanded perlite in rotary kilns. Sbor. trud.
ROSNIIMS no.25:72-93 '62 (MIRA 17:8)

CHERNOVA, O.A.

May fly larvae of the upper Pechora basin. Mat.k pozn.fauny i flory
SSSR. Otd.zool. no.6:203-208 '47. (MIRA 9:9)
(Pechora River--May flies)

CHERNOVA, O. A. (Moscow)

"Dto. for one-day flies".

Theoretical and Practical Work Carried out by Entomologists.
reported at All-Union Entomological Conference. Georgian Dept. A-U
Entomological Society, Tbilisi, 4-9 Oct 1947.
Vestnik AN SSSR, 1948, v. 28, No. 1, p. 129-30 (author Gilyarov, M. S.)

CHERNOVA, O. A.

PA 78T45

USSR/Medicine - Flies
Medicine - Taxonomy

Jun 1948

"New Genus and Species of May Fly From the Amur Basin
(Ephemeroptera, Amertropodidae)," O. A. Chernova, Inst
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